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COMPUTER SHOPPER™

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ATARI ST

Applying The Multi-Window Word Processor

by Frank Tymon

Introduction

Multi-Windows provide the most practical method for quickly and easily accessing many documents, or many parts of the same document. Editing, comparing, modifying different passages; and transferring paragraphs, sentences, or the like? Among the word processors currently available for the Atari 520ST the unique multi-window capability of the HabaWriter stands out.

"So what!" you say?

Well, so that is your immediate reaction. But let's give some thought to just what multi-windows provides. What, actually, is the advantage of multi-windows over single window operation?

There are, in fact, many. To recognize them we need to think of applications, rather than generalities. First, though, we'll define the multi-window concept.

Multi-Windows

The ordinary word processor displays a single screen of data, permitting you to scroll from one portion to another if you wish to re-examine an already written bit of material. For many purposes this is adequate capability. But when complex or extensive material is written it many times becomes necessary to move data from one section to another or to combine portions of your manuscript. Or to review what you have written previously with what you are currently writing. We'll look at these and other ideas shortly.

In contrast to the single window display the multi-window word processor allows you to scroll within each of several windows. Of more importance, these windows can be independent or synchronized. Thus they can scroll in step, or one can be stationary while the other scrolls. The contents of each window may be identical to that of the other window, or from a different section of the same document—or even from a different document.

Usage

If you are using only small, single documents then multi-windows may be of limited use to you. You may well be able to accomplish all you wish using the single window. Nevertheless, using multi-windows you may still be able to more easily accomplish your work.

On the other hand, suppose you are an author, with a variety of articles to write—many using similar material, or common references. Would the multi-window capability be of advantage? You bet it would!

The average author frequently revises portions of his product. Errors creep in, and need to be exorcised. The intended meaning differs from the written passage and the latter must be re-written. Or one of a multitude of discrepancies manage to occur.

Thus it is inevitable that manuscripts require some degree of editing. While performing an edit the author needs to continuously compare one version of his product to the other version. Aha! A multi-window capability to the rescue!

On another occasion the writer senses that he is repeating previously typed material. A quick scroll in the second window locates like passages. The present entries can be modified and a more nearly marketable produce ensues.

Combined Documents

The opposite side of the coin surfaces when one wants to combine documents, either in whole or in part. And again multi-windows can be of major use. A paragraph may be extracted from one document, a sentence from another; and all merged to form the final literary masterpiece.

Articles, books, etc., can be written as separate modules. These can then be loaded into separate windows, independently modified, and eventually merged in arbitrary order. And the modules can be separately retained for other purposes, even as the combined product rolls off the presses.

Application Example

Plainly the multi-window word processor has widespread usefulness. But enough of these generalities! Suppose we walk through a typical application, using this article to illustrate some of the basic ideas.

First we load HabaWriter into the Atari 520ST. The usual icons appear and we place our cursor on Writer.Prg. See Figure 1. Once Writer.Prg is selected the program loads, our screen reflects the HabaWriter Menu, and we are ready to do our thing. For this purpose we want to use three separate windows.

Selection

To access the various windows we use the mouse to activate the File drop-down menu. Once it becomes available to us we merely select New, repeating the process for each of the windows we wish to open.

When the windows are open we can easily move from one to another by placing the mouse marker on the desired window and pressing the left button. This brings the open window to the top position.

With the window in the top position we can easily expand it for use by placing the mouse marker in the upper left corner and pressing the left button. When we want to change windows we need to drop to the lower right corner, diminish the size of the current window until the desired window is visible, then place the mouse marker on the latter and again hit the left button.

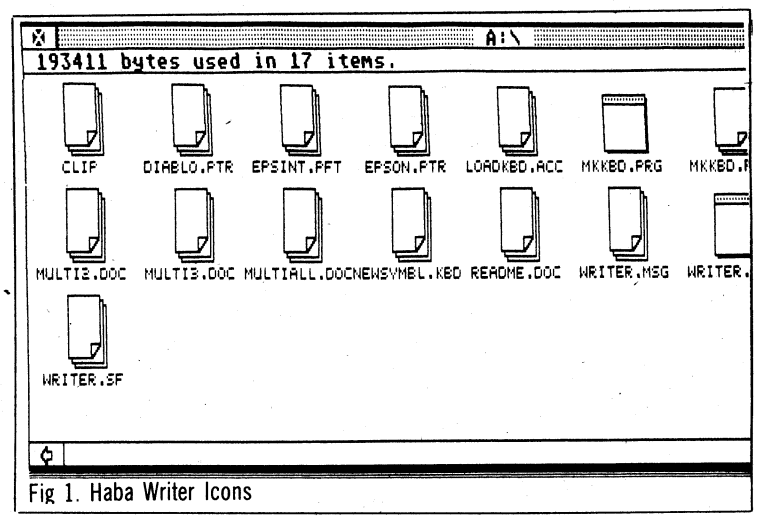

Fig 1. Haba Writer Icons

Having chosen a window we treat it as though it were the only window in use. Only when we wish to change windows or transfer data between windows need we concern ourselves with the existence of multi-windows.

When we no longer need one of the windows we can either clear the contents in full or part and use it for other purposes; or we can discard it. Purging the window is a simple matter of using the Block and cut entries under the Edit drop-down menu. Or, if the entire window is to be cleared we can use that instruction in conjunction with Block.

Block is implemented by positioning the mouse marker at the start of the material to be treated, holding down the left button, and moving the marker to the end of the block. When the button is released the entire block is highlighted, and can be moved, copied, or deleted.

It is often just as easy to delete the window and then renew it. Placing the mouse marker in the upper left corner of the window to be discarded press the left button. After a warning message you can delete the window and its contents. Returning to the File drop-down menu you can recall a new, empty window for use.

Figures 2, 3, and 4 show the File drop-down window and then the actual windows in their non-expanded form.

We begin the creation of a work of art unsurpassed in the modern journalistic world. Conceptually it might be divided into modules. With HabaWriter we need not develop the article in a lock-step sequence, but may address each module in its own window as ideas come to mind. When we are satisfied with the final product we consolidate the different portions into a unified whole. You might, depending on how your ideas flow, find yourself completing the conclusion before you begin the introduction!

In this simple illustration of the multi-window capability

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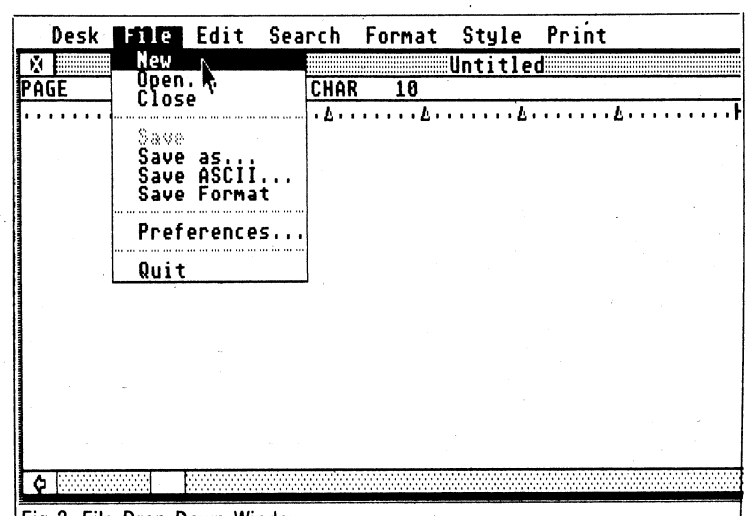


Fig 2. File Drop Down Window

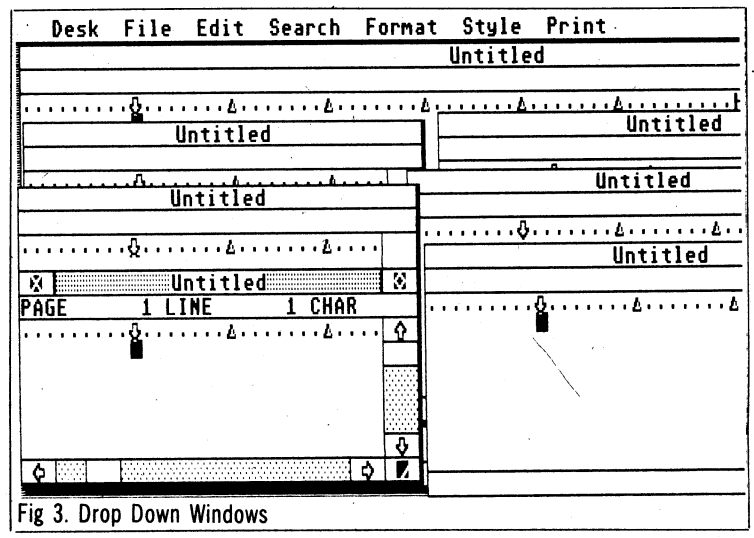
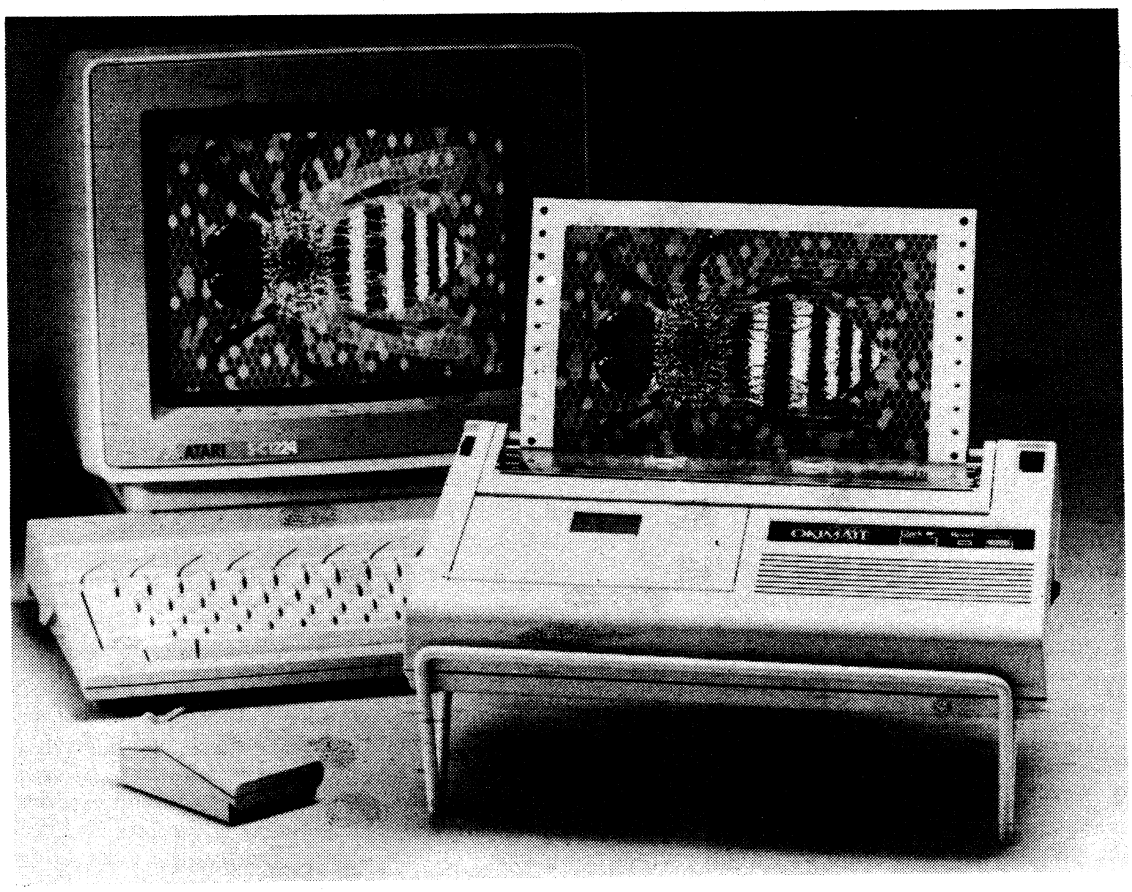


Fig 3. Drop Down Windows

Okimate 20 Prints From Atari ST



Okimate 20 Plug N' Print for ST

Okimate 20 compatibility took an important new step with the unveiling of Okidata's new Atari ST Plug 'N Print Kit for the Okimate 20 personal color printer.

The new Atari ST module connects the Okimate 20 to the power and versatility of both Atari ST series personal computers — the 520ST and the 1040ST. Atari ST users now can print more than 125 striking colors, using Okimate 20's special color ribbon, to create high resolution pictures, graphics and professional quality overheads on a variety of media including acetate.

The Atari ST compatible Okimate 20 was available in computer stores nationwide May 1, 1986. Distribution will be provided through Okidata's network of distributors.

The heart of the new Atari ST Plug 'N Print Kit is the interface module which inserts easily into the side of the Okimate 20. The kit features everything users need to begin printing immediately from their ST including a data cable, "clean hands" cartridge ribbons (color and black), sample computer paper and complete instructions.

No other outside programs are required with the Atari ST/Okimate 20 match-up. Both ST units incorporate the Okimate 20 into their respective menus allowing users to transfer full color, high resolution images directly from the screen to the printer. Introductory ST Plug 'N Print Kits provide additional support for users with a diskette that demonstrates picture capabilities of the ST as well as available fonts from both the ST and the Okimate 20.

Users can access several Okimate 20 type fonts including wide print, boldface, fine print, italics, superscripts, subscripts and underlining. The unit's unique 24-element printhead provides 80 characters per second (CPS) performance in standard type and 40 CPS in letter quality mode. Users can print in either 80 standard columns or 132 columns using condensed type.

Pricing for the Okimate 20 remains at $169, and the suggested retail price for the Atari ST Plug 'N Print Kit is $99, bringing the total price to $269.00. Other popular personal computers also may be used with the Okimate 20 by purchasing the appropriate Plug 'N Print Kit. Kits are available for the IBM PC, PCjr., Apple IIe, Apple IIc and Commodore Amiga.

For further information, contact Okidata, 532 Fellowship Road, Mt. Laurel, NJ 08054; (609) 235-2600, TWX: 710-897-0792.

Mention that you read about it in *Computer Shopper*. ●

Hacking The ST

by Wynn Rostek

I have one of the Atari 20 megabyte hard drives on our main development system. This has greatly increased the worry in my life. We're in one of the United States top lightning areas. (Brevard County, Florida) In June, July and August, we have almost daily thunderstorms of tremendous proportion, which have to be seen to be appreciated. Several friends have lost hard drives on a variety of systems when the power dropped unexpectedly.

As a result of their experiences, I know the dangers associated with powering down a hard drive. Every time you turn a drive off, the head does a "controlled" crash on the disk surface. A friend that services expensive CAD/CAM systems convinced me that you should limit the number of times you cycle power on a hard drive.

Since I don't want to cycle the power on the system every time I'm going to be called away, I was left facing the prospect of having the desktop pattern burned into the CRT. CRT burn was a problem that many of the early video games had. If you leave the same unchanging picture on the screen for long periods, eventually it "burns" the phosphor, and you can still make out the image even when it isn't displayed.

To get around this problem, later games had a "demo" mode where the pattern on the CRT cycled. This greatly decreased the burn problem. You will note that the desktop is a static display. If left on long enough, it too will burn into the CRT phosphor. I used to get around the problem by turning off the monitor when I was not going to be using the machine for a half-hour or more.

The problem with this solution is that it is not a great idea to be cycling the power on the CRT all the time. The CRT is the only tube in modern monitors. Tubes work by controlling the flow of electrons through a vacuum present inside them. (Why do you think they were called vacuum tubes by Americans? The British referred to them as "valves.") The tubes generate the electrons by heating a cathode with a filament. The filament is very similar to the filament of a lightbulb.

The filament is thin wire that is heated by the current passing through it to thousands of degrees. Metal expands when heated, and it contracts when it cools. This expansion and contraction can lead to great stress within the metal. The stress can lead to premature failure. Henry Petroski in *To Engineer is Human* says, "A bulb that has burned continuously for decades may appear in a book of world records, but to an engineer versed in the phenomenon of fatigue, the performance is not remarkable. Only if the bulb had been turned on and off daily all those years would its endurance be extraordinary, for it is the cyclic and not the continous heating of the filament that is its undoing."

Too much knowledge can often lead one to become stuck between the preverbial rock and a hard spot. Is it better to let the desktop become burned into the phosphor ruining the aesthetics of the display, or to cycle the monitor power and risk the failure by fatigue of the CRT filament, that is the question. (Apologies to the Bard.)

Thankfully, we have a third option, one that is inexpensive and easy. I will present a program, blank.prg, that solves this little dilemma. The xbios 7 call of the ST presents a way to change the colors displayed by using the color value as an index into a table of colors. This approach is very common today.

Even though the ST in medium resolution can only display 4 different colors at a time, and in low resolution can display only 16, the actual colors displayed are chosen from a palette. The palette in the ST can hold 16 colors. The colors on the CRT are made by selecting different combinations of the three primary colors Red, Green, and Blue.

A note to the curious that always thought Red, Yellow and Blue were the three primary colors: There are really two sets of primary colors, one for additive processes and the other for subtractive processes. Pigments work by absorbing all the colors except one, the "color" they appear. A pigment that absorbs red and yellow light appears blue, because the blue light is the only light that bounces off of it, the other colors are absorbed by it. Pigments are subtractive. Light on the other hand is additive. If you mix red light with green light, you get yellow. If you mix red paint with green paint, you get MUD!

The palette generated by the ST uses 3 digital to analog converters, one for each of the primary colors. Each A to D converter is a three bit converter. A three bit converter doesn't sound like it would be too useful, but three bits gives you 8 values (0 to 7). With 8 different amounts of red, 8 different amounts of green and 8 different amounts of blue, the number of "colors" you can generate is 8 * 8 * 8 or 512!

For each color in the palette, there are 3 bits for the red value, three bits for the green value and three bits for the blue value. A color in the

continued on page 176

ATARI

Applying The Atari

by Jeff Brenner

Readers often send me "Applying The Atari" programs that they've modified by adding extra features or by customizing the programs for more specific applications. This month, we'll enter two particularly useful modifications that have been submitted by readers. We'll also gain some insight into the workings of last month's BudgetMate, answer some reader mail, and start our "Reader Requests" section.

Reader Mail

Dear Jeff:

I need some help with a program that I can't get to run on my 800XL. I hope that you can help me to get it running. Here is the program:

```
10 PRINT "LINE 10"
20 FOR A=1 TO 10
30 PRINT "LINE 30"
40 NEXT A
50 PRINT "LINE 50"
60 END
```

The book says that if you have a program that prints something on the screen, but you would like to have it printed on the printer, you can type POKE 838,166:POKE 839,238 and any text that would normally be printed on the screen will be printed on the printer. It also says that to "undo" this, type POKE 838,244:POKE 839,241. The book instructs me to add these lines to the program above.

```
5 POKE 838,166:POKE 839,238
55 POKE 838,244:POKE 839,241
```

The book says to run the program and watch the printer. Line 5 instructs the computer to send the printer everything that would normally be printed on the screen. Line 55 returns everything to normal. Now when I run this, nothing happens. Can you help?

Albert G. Williams
Oakland, California

The pokes that you mention are a well-known programmer's trick that reroutes the computer's text output from the screen to the printer. However, these pokes will work on the Atari 400/800 only. The manner in which locations 838 and 839 are changed above is the equivalent of making an illegal jump into the Atari's operating system, since the computer is directed to a specific location in ROM that is not guaranteed to remain the same in future versions of the operating system. The operating system of the Atari XL/XE has been substantially revised from that of the 400/800, and consequently, this illegal jump results in a crash. Fortunately, I can offer you a simple solution:

To direct text output to the printer, use:

```
POKE 838,PEEK(58422):POKE
839,PEEK(58421)
```

To redirect output back to the screen:

```
POKE 838,PEEK(58374):POKE
839,PEEK(58373)
```

This is a more general form of the pokes that you mention, and it will work on both the 400/800 and XL/XE machines. Make these two lines 5 and 55, respectively, and your program should now direct its output to the printer (make sure it's turned on) instead of the screen.

Dear Jeff:

You advised a reader ("Atari Help," 2/86) to consider a disk drive for her Atari 400 (to simplify and speed up loading programs for her children). The Atari 400 has 16K of memory. BASIC takes up about 8K of memory. If she gets a disk drive, the DOS will take up about 5K of memory. This will leave her with about 3K. What "variety of software" can use such a limited amount of RAM?

John Pilge
Soquel, California

That's a good point. With all of the talk about 64K, 128K, and now 512K and megabytes, it becomes all too easy to forget about the 16K, and maybe even 8K machines that are still in use out there. Still, a 16K Atari diskette system will leave almost 8K of free RAM, not 3K as you say. Atari BASIC steals 8K of memory only in an Atari with 48K RAM or more. On a 48K/64K machine, the BASIC ROM displaces the RAM located at 40960 through 49151. On an Atari with less than 48K, the BASIC ROM does not displace any RAM memory, since locations 40960 through 49151 are unused on such a machine. Nonetheless, I agree that a very limited number of programs will run in this amount of RAM, and perhaps I should have suggested that the reader purchase a memory expansion board in addition to the disk drive, if she had not already expanded her 400.

Dear Jeff:

In the April 1986 issue you published the CX-85 Keypad Driver Creator (for the XL/XE). It works fine, except that I would like to have the YES key to print as a comma instead. What do I have to change in the program to have a comma using the YES key? I think other readers would appreciate this.

Yigal Feiner
Orange, New Jersey

A number of readers have asked how to define the YES key as a comma. In the original keypad drivers published in July 1985, I included a version that read the YES key as a comma to facilitate the entry of BASIC data lines: The line number could be typed with the right hand on the keypad, "DATA" could be typed with the left hand on the keyboard, and then all of the digits and the commas separating them could be typed with the right hand on the keypad. Obviously, this can be an enormous timesaver in a program with many lines of data, particularly if you have developed some keypad speed. There are two ways that the comma can be added in place of the YES key. If the keypad driver has been loaded and you are in BASIC, type: POKE 52296,32. This will change the YES key to a comma for that programming session. If you want to make this change permanent, change the second to last number on line 310 of the CX-85 Driver Creator from 43 to 32. Then run the program to create a new driver. This driver will now support the comma in place of the YES key.

Reader Requests

Readers have been so responsive and helpful in the past in discovering software items such as genealogical programs, and hardware products such as memory expansion boards, that I will now be including this section from time to time to help readers locate hard-to-find Atari items, or even to learn if such items exist. If you can help any of these readers, please write! I'll relay your message directly to the person seeking help, and I'll print the information in a future issue for the benefit of other readers. Please correspond directly with those readers whose full addresses are given.

Q. I am looking for a program where I can use my printer (Gemini 10X) to print bar codes on labels or on card stock. Can anybody lead me in the direction for such a program?

Tom Ashton
Winchester, Virginia

continued on next page

Listing 2

SCREEN WINDOW ROUTINE

```
10  *=$600 ; RELOCATABLE
20 ; SCREEN WINDOW ROUTINE
30 ; COPYRIGHT 1986 JEFF BRENNER
40 ; Opens window over specified area of GR.0 screen
50 ; Contents of window exchanged with string
60 ; FORM A=USR(WINDOW,ADR(W$),X,Y,L,H)
70 ; Where W$ is string exchanged with window
80 ;       X,Y is pos. of window
90 ;       L,H are length & width in characters
```

continued on next page

Listing 1

INVERSE LINE ROUTINE

```
10  *=$600 ; RELOCATED
20 ; INVERSE LINE ROUTINE
30 ; BY JEFF BRENNER
40 ; Highlights section of screen line
50 ; by changing to inverse video characters
60 ; FORM: A=USR(INVERSE,X,Y,L)
70 ;       where X,Y is screen position and
80 ;       L is # of characters to inverse
90  PLA
0100  PLA
0110  PLA
0120  TAX
0130  LDA 88
0140  STA $D0    ; TEMP SCREEN ADR HOLD, LOW
0150  LDA 89
0160  STA $D1    ; TEMP SCREEN ADR HOLD, HIGH
0170  PLA
0180  PLA        ; GET SCREEN LINE VARIABLE (Y)
0190  TAY        ; REG. Y NOW HOLDS LINE NUMBER
0200  BEQ NEXT ; INVERSE FIRST LINE
0210 LOOP CLC
0220  LDA $D0
0230  ADC #40;ADVANCE TO NEXT LINE (40 BYTES)
0240  STA $D0
0250  LDA $D1
0260  ADC #0  ; ADD W/CARRY
0270  STA $D1
0280  DEY
0290  BNE LOOP
0300 NEXT CLC
0310  TXA
0320  ADC $D0
0330  STA $D0
0340  LDA $D1
0350  ADC #0
0360  STA $D1
0370  PLA
0380  PLA
0390  TAY
0400  DEY
0410 CONT
0420  LDA ($D0),Y
0430  EOR #128 ; EOR TOGGLES INVERSE ON/OFF
0440  STA ($D0),Y
0450  DEY
0460  BPL CONT
0470  RTS     ; ALL DONE
0480  .END
```

Applying The Atari
continued from page 71

Q. I would be very interested in contacting with other AMDEK drive owners. As you may know, there was almost no software published in this 3" drive format. Perhaps we could compare notes, share information and swap programs. Please print my request in your column along with my mailing address. I'll do my very best to answer all letters received. Maybe someone will even have some disks to sell! My local source has dried up.

John W. Hawkins
64 Park Drive, Apt. C
Dayton, OH 45410

Q. I would like to obtain the Cosmatic Atari Development Package by John R. Powers, III, but this APX program is no longer available. Can anybody tell me where I might obtain this program or how I may get in touch with the author? Atari seems to have no information on either the program or the author anymore.

A.J. Rossell
Milford, Michigan

Q. I'm looking for three products for my Atari 130XE. The first is SCRAM a nuclear power plant simulation that at one time Atari themselves sold. The second is a game called Crush, Crumble and Chomp, where you take on the role of a movie monster. Finally, Microsailing, a yacht racing game written by Glenn Faden and sold as late as 1983 through the Atari Program Exchange.

Neil G. Hyatt II
7717 Buffalo Grove Road
Loves Park, IL 61111

I have been unable to locate any poetry writing programs for the Atari (e.g. Haiku, or equivalent of Apple Poetry Express or the new IBM programs). Do any readers know of any commercial or public domain versions (or the latter translated from the Apple or IBM)?

Don Parsons
Delmar, New York

Newsletters

In the mail this month comes the W.A.C.O. Newsletter from the Woodlands Atari Computer Organization (c/o Gary Houser, 2443 Ripplewood, Conroe, TX 77384, $20/yr), the R.A.A.U.G. Newsletter from the Randolph Area Atari Users' Group (P.O. Box 2611, Universal City, TX 78148, $15/yr), and the newsletter of the Atari Computer Enthusiasts (3662 Vine Maple Drive, Eugene, OR 97405, $14/yr). Incidentally, ACE was the recipient of Antic's "Outstanding Users Group" award, and the group's excellently produced newsletter demonstrates that the award is well-deserved.

BudgetMate

Let's take a quick look at some of the workings of June's BudgetMate before we enter this month's programs. Specifically, we'll learn how BudgetMate's specialized screen displays were created and manipulated.

Two machine language routines help to highlight areas of the screen and to move "windows" of text about. Listing 1 is the assembly listing of the Inverse Line Routine. This routine turns a given number of characters on the screen, at a given screen position, into inverse video characters. It is used to highlight boxes on the BudgetMate screen and effectively serves as an elongated cursor. Machine language was used for this routine to allow the quick, clean movement of the cursor-block from one area of the screen to another.

Listing 2 is the assembly listing of the Screen Window Routine. It allows a small window, or section of a screen, to be temporarily "overlayed" on top of the existing screen. A subsequent call of the window routine replaces the original screen area. The menu feature employs the Screen Window Routine well. When the ESC key is pressed, the menu window is simply placed "on top" of the budget categories. When RETURN is then pressed, the window is removed, and the budget categories reappear.

Additionally, player-missile graphics are used to separate the budget categories and the three data columns. The alternating colors of each line of the display is achieved with a version of the May 1985 Multi-Luminance Graphics 0 program.

Alphabetize Your Diskette Collection

ABCDIR is a reader-submitted program that is used with the Instant Alphabetizer ("Applying The Atari," 2/86) to produce an ordered list of all your programs. Frank Walters, the author of this program, writes:

Your Instant Alphabetizer in the February issue of *Computer Shopper* is exactly what I have been needing for nearly a year. I am running an AMIS bulletin board for a local users' group and maintain a listing of available public domain programs in a "Catalog" file. I list about 300 titles in each volume and sorting has been tedious using a Microsoft BASIC sorter I modified for the purpose. The longest list took over 25 minutes just to sort. The memory available limited the sort to about 400 filenames. I modified my directory reading program to save the data in a file compatible with Instant Alphabetizer and then proceeded to sort it with your program. After a nearly instant

continued on page 193

Listing 2 Continued

```
0100   PLA
0110   PLA
0120   STA $D4
0130   PLA
0140   STA $D3
0150   PLA
0160   PLA
0170   TAX     ; X POSITION
0180   LDA 88
0190   STA $D0
0200   LDA 89
0210   STA $D1
0220   PLA
0230   PLA
0240   TAY     ; Y POSITION
0250   BEQ SKIP
0260 LOOP CLC
0270   LDA $D0
0280   ADC #40
0290   STA $D0
0300   LDA $D1
0310   ADC #0
0320   STA $D1
0330   CLC
0340   LDA $D3
0350   ADC #40
0360   STA $D3
0370   LDA $D4
0380   ADC #0
0390   STA $D4
0400   DEY
0410   BNE LOOP
0420 SKIP CLC
0430   TXA
0440   ADC $D0
0450   STA $D0
0460   LDA $D1
0470   ADC #0
0480   STA $D1
0490   TXA
0500   ADC $D3
0510   STA $D3
0520   LDA $D4
0530   ADC #0
0540   STA $D4
0550   PLA
0560   PLA
0570   TAY ; LENGTH
0580   DEY
0590   STY $D5
0600   PLA
0610   PLA
0620   TAX ; HEIGHT
0630 HLOOP LDY $D5
0640 MORE LDA ($D0),Y
0650   STA $D6
0660   LDA ($D3),Y
0670   STA ($D0),Y
0680   LDA $D6
0690   STA ($D3),Y
0700   DEY
0710   BPL MORE
0720   CLC
0730   LDA $D0
0740   ADC #40
0750   STA $D0
0760   LDA $D1
0770   ADC #0
0780   STA $D1
0790   LDA $D3
0800   ADC #40
0810   STA $D3
0820   LDA $D4
0830   ADC #0
0840   STA $D4
0850   DEX
0860   BNE HLOOP
0870   RTS
0880   .END
```

Listing 3

ABCDIR

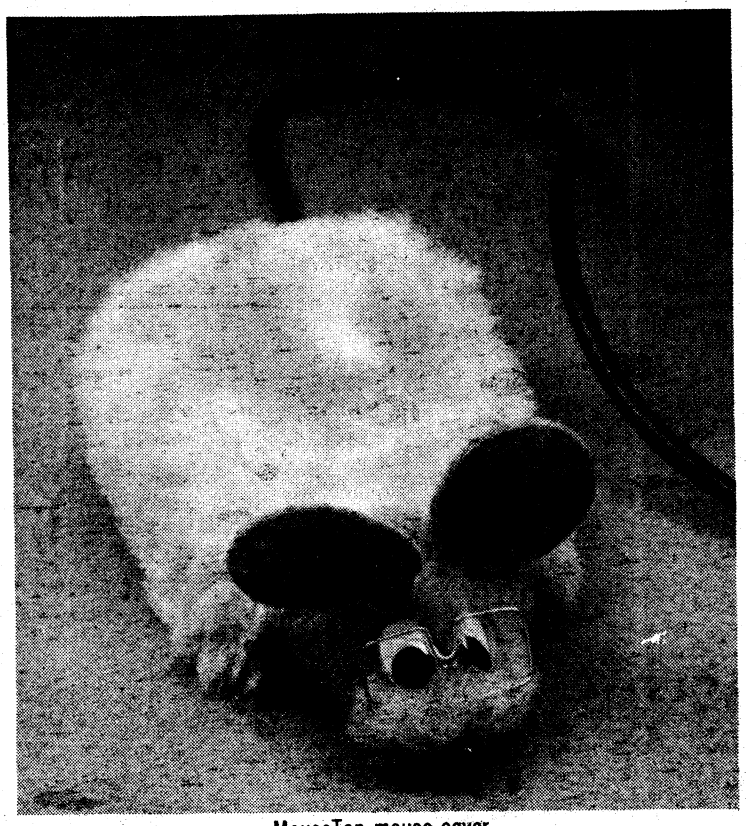
```
PHJ 10 REM ABCDIR DISK DIRECTORY LOADER
JSJ 20 REM BY FRANK WALTERS, TYNDALL ATARI COMPUTER ORGANIZATION
RUJ 30 LN=20:DIM FN$(15),FILE$(18),IN$(17),DAT$(LN*64),D$(6)
NDJ 40 MAX=(INT(FRE(0)-500))/LN:C=0:H=0:L=0
JJJ 50 GRAPHICS 0:POKE 709,10:POKE 710,144:POKE 82,0
PWJ 60 PRINT "ABCDIR"
YLJ 70 PRINT "BY FRANK P. WALTERS"
YGJ 80 PRINT "FOR USE WITH 2/86 INSTANT ALPHABETIZER"
NGJ 90 PRINT :PRINT "<1> DISK DRIVE":PRINT "<2> DISK DRIVES"
OYJ 100 PRINT :PRINT CHR$(127);"Which:";
YVJ 110 POKE 764,255:WON=0
UYJ 120 IF PEEK(764)<30 OR PEEK(764)>31 THEN 120
CRJ 130 WON=32-PEEK(764):POKE 764,255:PRINT WON:IF WON=2 THEN WON=0
NIJ 140 PRINT :PRINT "Enter FILENAME for D1:";:INPUT IN$
UMJ 150 IF IN$(2,2)<>":" AND IN$(3,3)<>":" THEN 160
EEJ 160 FN$="D1:":FN$(4)=IN$:POKE 764,255
JOJ 170 PRINT :PRINT "<N>EW FILE","<A>PPEND FILE"
WLJ 180 PRINT :PRINT "Choice:";
DMJ 190 IF PEEK(764)<>35 AND PEEK(764)<>63 THEN 190
GDJ 200 IF PEEK(764)=35 THEN PRINT "New":GOSUB 570:GOTO 250
BNJ 210 TRAP 590:PRINT "Append":CLOSE #1:OPEN #1,4,0,FN$
RYJ 220 GET #1,LN:GET #1,N:GET #1,L
RZJ 230 C=256*H+L:IF C>=MAX THEN PRINT "MAXIMUM FILE LENGTH REACHED":END
BGJ 240 CLOSE #1
SPJ 250 IF WON THEN 280
PDJ 260 PRINT :PRINT "Insert $WRITE$ disk in Drive 1"
HKJ 270 PRINT :PRINT "Insert $READ$ disk in Drive 2":GOTO 290
KYJ 280 PRINT :PRINT "Insert $READ$ disk in Drive 1"
LAJ 290 POKE 764,255:PRINT :PRINT "Press <RETURN> TO END"
JMJ 300 PRINT :PRINT "Disk name or number";:INPUT IN$:PRINT
ORJ 310 IF  NOT LEN(IN$) THEN POKE 82,2:TRAP 40000:END
DBJ 320 IF LEN(IN$)>3 THEN ? "THREE DIGITS MAXIMUM":PRINT :GOTO 290
HFJ 330 IF LEN(IN$)=1 THEN IN$(3)=IN$(1,1):IN$(1,2)="  "
SCJ 340 IF LEN(IN$)=2 THEN D$=IN$:IN$=CHR$(32):IN$(2,3)=D$
FEJ 350 D$="D2:*.*":IF WON THEN D$(2,2)="1"
HVJ 360 CLOSE #1:OPEN #1,6,0,D$
MLJ 370 FOR I=0 TO 63
KWJ 380 INPUT #1;FILE$:IF FILE$(11,13)="SYS" THEN 380
LPJ 390 PRINT FILE$
MXJ 400 IF FILE$(4,4)="+" THEN POP :GOTO 460
PYJ 410 IF FILE$(4,7)=" FRE" OR FILE$(5,8)=" FRE" THEN POP :GOTO 460
PCJ 420 DAT$(LEN(DAT$)+1)=FILE$(3)
OSJ 430 IF LEN(FILE$)=18 THEN 450
ONJ 440 DAT$(LEN(DAT$)+1)=CHR$(32)
WWJ 450 DAT$(LEN(DAT$)+1)=IN$:DAT$(LEN(DAT$)+1)=CHR$(124):C=C+1:NEXT I
FHJ 460 IF  NOT WON THEN 510
PGJ 470 PRINT :PRINT "Insert $WRITE$ disk in Drive 1"
VIJ 480 PRINT :PRINT "Press <RETURN>";:POKE 764,255
NMJ 490 IF PEEK(764)=255 THEN 490
CWJ 500 IF WON THEN PRINT
KXJ 510 CLOSE #1:OPEN #1,9,0,FN$
KMJ 520 H=INT(C/256):L=C-(H*256)
USJ 530 PRINT #1;DAT$;:CLOSE #1:OPEN #1,12,0,FN$:NOTE #1,S,B:B=B+1:POINT
        #1,S,B
VXJ 540 PUT #1,H:PUT #1,L
BKJ 550 CLOSE #1
SPJ 560 DAT$="":GOTO 250
TEJ 570 TRAP 590:CLOSE #1:OPEN #1,8,0,FN$:PUT #1,LN:PUT #1,H:PUT
        #1,L:CLOSE #1
RIJ 580 PRINT :PRINT "File ";FN$;" initialized.":PRINT :POKE
        764,255:RETURN
BJJ 590 CLOSE #1:TRAP 40000
PRJ 600 PRINT :PRINT "ERROR - ";PEEK(195);" AT LINE "
        PEEK(187)*256+PEEK(186)
SDZ 610 POKE 764,255:POKE 82,2:END
```

Listing 4

ATASCII LISTER II

```
LAJ 10 REM ATASCII LISTER II
KFJ 20 REM COPYRIGHT 1985 JEFF BRENNER
BBJ 30 REM ENHANCED BY PAUL SNIDER
MKJ 40 G=0
NVJ 50 OPEN #3,8,0,"P:"
UDJ 60 DIM LM$(100),OK$(1)
KWJ 70 RESTORE 510:FOR I=0 TO 218:READ N:POKE 1536+I,N:NEXT I
RMJ 80 DIM N$(15),DN$(17),TMP$(2040),C$(120),D$(1),E$(1),MS$(30):POKE 766,0
HJJ 90 DN$="D:":OPEN #1,4,0,"E:"
YFJ 100 PRINT "<C>ASSETTE OR <D>ISK";:INPUT E$:IF E$="C" THEN DN$="C":GOTO 120
RSJ 110 PRINT "FILENAME: D:";:INPUT #1;N$:IF N$(1,2)="D:" THEN N$=N$(3,LEN(N$))
CAJ 120 DN$(LEN(DN$)+1)=N$:OPEN #2,4,0,DN$:GOTO 140
NBJ 130 PRINT "ERROR #";PEEK(195):GOTO 110
MIJ 140 TRAP 140:PRINT "DENSITY (1-2): ";:INPUT #1;D:IF D<1 OR D>2 THEN 140
KDJ 150 D$=CHR$(74+D)
IFJ 160 TRAP 160:PRINT "CHARACTERS PER LINE (NORM=38) ";:INPUT #1;CPL
QIJ 170 CL=CPL*8:H1=INT(CL/256):L1=CL-H1*256
GXJ 180 PRINT "WILL THERE BE MORE THAN ONE LISTING?":PRINT "(Y/N)";:INPUT OK$
FNJ 190 IF OK$<>"Y" AND OK$<>"N" THEN 180
RFJ 200 PRINT "LEFT MARGIN: ";:INPUT #1;LM
LYJ 210 FOR I=1 TO LM:LM$(LEN(LM$)+1)=CHR$(32):NEXT I
MNJ 220 TRAP 430:POKE 766,1:INPUT #2;C$:PRINT C$:LN=LEN(C$):C=1
LTJ 230 C$(LEN(C$)+1)=CHR$(155):TMP$(1)=CHR$(0):TMP$(2040)=CHR$(0):TMP$(2)=TMP$
SVJ 240 A=USR(1536,ADR(C$),ADR(TMP$)):I=0:L=1:A=USR(1716,ADR(TMP$))
IGJ 250 TRAP 490:PRINT #3;CHR$(27);CHR$(64);:I=0:L=1
HQJ 260 IF LN<(CPL+1) THEN 350
HAJ 270 LN=LN-CPL
OWJ 280 TRAP 490:PRINT #3;CHR$(27);CHR$(64);LM$;CHR$(27);D$;CHR$(L1);CHR$(H1);
QWJ 290 PRINT #3;TMP$(I*8+1,(I+CPL)*8);CHR$(10);:I=I+CPL
SQJ 300 G=G+1
GHJ 310 IF G=62 THEN GOTO 330
BMJ 320 GOTO 260
OIJ 330 G=0
BWJ 340 PRINT #3;CHR$(10);CHR$(10);CHR$(10);CHR$(10);:GOTO 260
AEJ 350 K=LN*8:H=INT(K/256):L=K-H*256
LBJ 360 TRAP 490:PRINT #3;CHR$(27);CHR$(64);LM$;CHR$(27);D$;CHR$(L);CHR$(H);
QDJ 370 PRINT #3;TMP$(I*8+1,I*8+K+1);CHR$(10);
SYJ 380 G=G+1
SHJ 390 IF G=62 THEN 410
BHJ 400 GOTO 220
OHJ 410 G=0
BRJ 420 PRINT #3;CHR$(10);CHR$(10);CHR$(10);CHR$(10);:GOTO 220
CNJ 430 G=65-G:FOR X=1 TO G
RRJ 440 PRINT #3;CHR$(10);:NEXT X
ZAJ 450 IF OK$="Y" THEN 470
MJJ 460 PRINT #3;CHR$(27);CHR$(64);CHR$(12);
JZJ 470 PRINT "END OF LISTING.":CLOSE #3:IF OK$="Y" THEN RUN
PXJ 480 END
GNJ 490 PRINT "RESET PRINTER - PRESS RETURN":INPUT #1;E$
UZJ 500 GOTO PEEK(186)+256*PEEK(187)
JEJ 510 DATA 104,104,133,205,104,133,204,104,133,207,104,133,206,169,0,168
ASJ 520 DATA 133,203,177,204,170,232,224,156,208,3,76,169,6,10,38,203
UIJ 530 DATA 74,201,96,176,22,201,64,176,9,201,32,176,11,105,64,76
PAJ 540 DATA 59,6,56,233,32,76,59,6,56,233,32,133,208,169,0,133
WFJ 550 DATA 209,24,162,3,24,38,208,38,209,202,208,248,24,173,244,2
CSJ 560 DATA 101,209,133,209,160,7,162,1,177,208,157,171,6,136,232,224
SSJ 570 DATA 9,208,245,169,8,141,170,6,160,0,162,8,177,206,62,171
DAJ 580 DATA 6,42,145,206,202,208,245,165,203,240,6,177,206,73,255,145
DZJ 590 DATA 206,24,165,206,105,1,133,206,165,207,105,0,133,207,206,170
POJ 600 DATA 6,173,170,6,240,3,76,106,6,24,165,204,105,1,133,204
BKJ 610 DATA 165,205,105,0,133,205,76,13,6,96,0,0,0,0,0,0
HAJ 620 DATA 0,0,0,0
JNJ 630 DATA 104,104,133,205,104,133,204,169,154,133,206,230,206,162,8,160
COJ 640 DATA 0,177,204,197,206,208,4,169,151,145,204,200,192,0,208,241
TSZ 650 DATA 230,205,202,208,234,96,155
```

MouseTop Replaces The Plain Mouse



MouseTop mouse cover

The end of the plain mouse has come with the introduction of the MouseTop mouse cover by H&H Enterprises. MouseTop, the mouse cover with a "Country Mouse" look, has set out to give personality to computer mouses nationwide.

This cover fits most popular computers' mouses including Apple, Commodore, IBM, and Tandy. Made from quality silver/grey fur, MouseTop comes in two varieties. One is slightly near-sighted and wears wire rimmed "granny" glasses. The other has 20/20 vision.

"We believe," says Ed Hamilton, company president and designer of the MouseTop, "We have created a mouse cover that is both fun and functional." The washable MouseTop protects the computer mouse from the grime of daily use. And, its humorous appearance can weasel a smile out of the most serious hacker.

MouseTop retails at $5.95 with glasses and $5.49 with 20/20 vision.

H&H Enterprise, a three year old company, manufactures and markets gifts for the computer enthusiast. Other products include the Friendly Computer Bug — an integrated circuit with moving eyes, a colorful tail, and a training manual — and CompuStickers — a set of 12 computer literate bumper stickers.

For more information contact H&H Enterprises, P.O. Box 2672, Corona, CA, (714) 737-1376.

Mention that you read about it in *Computer Shopper*. ●

Multi-Window continued from page 67

we have used three windows. In the first we started the article, then continued it in the second window, and finalized it in the third. As we progressed through the article, and as ideas firmed up, contents of each window were repetively updated. Figure 5 is a dump of the screen, reflecting portions of each of the windows.

Use of three windows actually proved beneficial in this development, as ideas popped up unexpectedly and needed to be inserted in the appropriate location. Thus the entire set of windows were being concurrently expanded. The tendency of our minds to skip from idea to idea is now not a handicap! We can capture those ideas on the fly, allocating them to the window into which they best fit.

Of course, when an idea surfaces in one context it may well suggest a similar one in another context. With the use of multi-windows it is simple to quickly capture the gist of these concepts, each in its own framework, thanks to the Haba-Writer approach.

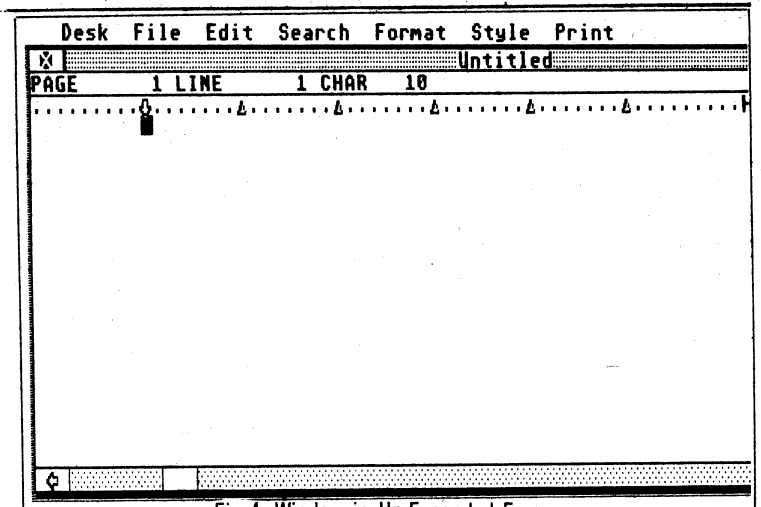


Fig 4. Window in Un-Expanded Form

Work Windows

Plainly the ability to swap all or part of a window's contents to another window is a useful tool. A paragraph which needs massaging can be transferred from the Master window in which it resides to a work window, modified as required, and returned to its original location. The work window can then be purged and is ready for the next chore.

The concept of using a work window, or work windows, as opposed to making changes directly in the Master document is well worth pursuing. You always have the original to

continued on page 190

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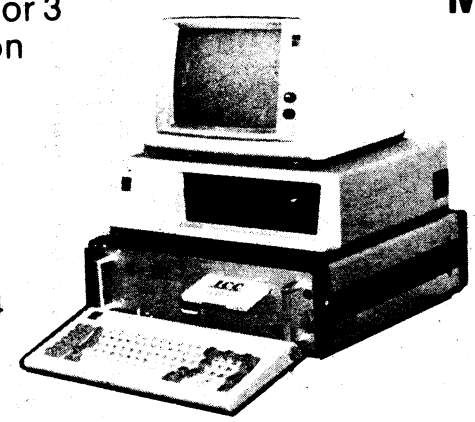

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DEALERS WELCOMED

Hacking The ST
continued from page 68

palette can be thought of as an array of 3 small numbers.

In medium resolution, the ST displays 4 colors. This is because the ST uses 2 bits for each pixel. If the ST only uses 2 bits for each pixel, how does the monitor get the 9 bits needed for the red, green and blue digital to analog converters? The 2 bits used for each pixel are used as the index into the palette. When the pixel being displayed is made up to two 0s, the ST goes to the palette and pulls 9 bits from palette[0]. The bits are sent to the D to A converters, and the monitor receives red, green and blue values.

For a pixel value of 1 (01) the ST pulls 9 bits from palette[1] and sends them to the D to A converters. The xbios 7 call (and the xbios 6 call) can be used to change the colors displayed by the ST. The xbios 7 call takes 2 parameters, the palette entry you want to change and the color you want to change it to. If the color is negative, the xbios 7 call leaves the color unchanged. This is useful because the old value is returned in register 0. If you want to find out what color was used for color[x], you can perform old_color = xbios(7, x, – 1).

We can cause the ST to "Blank" the CRT by setting every color in the palette to black! It is a good idea to save the old color settings so the colors can be restored later. The program appears in listing 1. The first for loop saves the old color values and sets the new color to black. We then clear out the keyboard buffer and wait for the operator to hit a key. When a key is pressed, we restore the old colors and exit. You can change the line tint = 0; to other values to change the color the CRT displays. (A #define could also be used.)

```
#include <stdio.h>
#include <osbind.h>

main()
{
int color [16];      /* table to hold old color values      */
int x;               /* loop counter                        */
int tint;            /* color the crt defaults to           */

tint = 0;
for (x = 0;x < 16;x++) color[x] = xbios(7,x,tint);
drain();
Bconin(2);
for (x = 0;x < 16;x++) xbios(7,x,color [x];
}
```

Listing 1
A Program To Blank The Screen Of The ST

A word about the way the color bits are arranged in the palette. Since the D to A converters use a total of 9 bits, you may think that the lower 9 bits of the color word are used, but the bit arrangement is not quite that straightforward. Instead of using bits 0 through 8, the ST uses a nybble (4 bits) for each color, and the high bit is not used. With the setup used by the ST, bits 0,1 and 2 are used to control the blue color, bits 4,5 and 6 control the green and bits 8,9 and 10 control red. Bits 3,7 and 11 are not used.

This arrangement means that 0x000f is the same color as 0x0007. Listing 2 is a small program that cycles the ST through all the colors it can display. The program takes almost 4 minutes to display all 512 colors. The blues cycle most frequenly, and the reds do not show up until towards the end. You will also notice how the color word is formed from the red, green and blue values. While the ST in medium resolution can only display 4 colors at a time, the 4 colors can be any 4 of the 512 the ST is capable of.

There is a call closely related to the xbios 7 call, the xbios 6 call is used to switch in a complete palette at a time instead of a single color at a time. The palette array must be on a word boundary, which is no problem if you are using C, because the compiler automatically takes care of it. Instead of changing just one color, the xbios 6 call changes all 16 colors at once. The palette switching actually occurs when the CRT is blanked for vertical retrace. Listing 3 is blank2.prg, which performs the same function as blank.prg, but uses the xbios 6 call to switch in the new palette.

Good news for developers, Atari has released a new relocation utility the new version of RELMOD.PRG cleans up several problems that existed in the old one. One of the biggest changes was a change from an integer to a long integer (long) for a pointer used by the program. This new RELMOD.PRG cleared up several unexplained problems we had experienced in the past.

Atari has also released ctype.h and ctype.o along with some string handling functions. There is also a BCD math package for the Alcyon compiler. I have also seen a new LIBF, the object code for the floating point package. There were several problems with the old package, and Atari claims they have been corrected. These files can be downloaded from DL7 of the Atari developers sig on Compuserve. I am surprised that Atari has failed to notify the developers that these packages are now available, especially since they correct many known problems in the compiler package.

It seems that the $5000 development systems don't come with quite the amount of support that Atari lead us to believe. In the future, I think we will think seriously about waiting the additional 12 weeks and pocketing the $2000. You would think that Atari would tend to take care of the people that put down that kind of money, but we have not really received any kind of support beyond that supplied to the people that bought the $300 developers package.

Speaking of support, the technical support at Atari has improved vastly. It seems that the learning curve at Atari was lagging behind the developers for the first 6 or 8 months the systems were out, but everyone at Atari seems to be up to speed now. Atari has also released 2 new documentation packages the first covers some GEM calls that were added when TOS was put into ROM, and the second package documents GEMDOS. The new GEMDOS manual is a must. It documents the GEMDOS calls in far greater detail than the old GEMDOS manual. It also corrects several mistakes that

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Hacking The ST continued from page 176

appeared in the earlier version.

I'd like to cover one more xbios call this column. The Supexec call, xbios 38 is used to execute code in the supervisor mode. The supervisor mode is used to execute privileged instructions and to access otherwise protected locations in the ST. The Supexec call takes one argument, the address of a code segment to be executed in the supervisor mode. You may wonder how you pass the address of a code segment to a function. In C, you can pass the address of a function to a function by simply using the name, provided that the function in question has been declared. If peekb is a function in one of our libraries, then we can execute peekb in the supervisor mode by using code similiar to the following:

```
int demo()
/* this function is a demo of
how to use the xbios 38 call */
{
int peekb();

xbios(38,peekb);
}
```

Since peekb was declared as function (by the () after the name) the compiler will pass the address of peekb to the xbios 38 call. There are some shortcomings to using the Supexec call. You cannot pass arguments to a function being executed with the Supexec call. As an example, xbios(38,peekb (27)); will not work. You cannot execute bios or GEMDOS calls in a function that is running under the Supexec call. You can get around the parameter and result passing problem by using globals to pass information into and out of the function running under the Supexec call, but it really makes more sense to use the GEMDOS Super call for these situations.

Last month I discussed pro-

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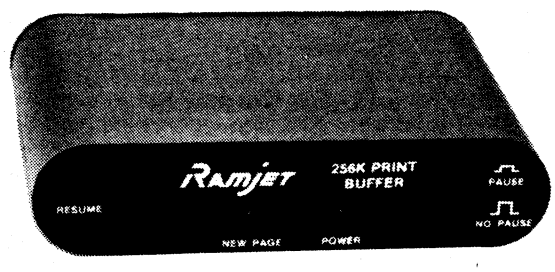
```
#include <stdio.h>
#include <osbind.h>
int red;              /* red value                    */
int green;            /* green value                  */
int blue;             /*blue value                    */
main()
{
int color[16];        /* table to hold old color values */
int x;                /* loop counter                 */
int shade;            /* color number                 */
int tint;             /* color the crt is set to      */
red = 0;
green = 0;
blue = 0;
/* save old colors */
for (x = 0;x < 16;x++) color[x] = xbios(7,x, -1);
/* show all possible colors */
for (shade = 0;shade < 512;shade++)
    {
     tint = (blue + (green * 16) + (red *256));
    for (x = 0;x < 16;x++) xbios(7,x,tint);
    delay(1000);
    bump_color();
    }
/* restore the original palette */
for (x = 0;x < 16;x++) xbios(7,x,color[x]);
}
int bump_color()
/* this function increments the color value    */
/* you cannot use a straight increment         */
/* because the red, green and blue bits are    */
/* nybble aligned.                             */
{
blue++;
if (blue == 8)
   {
    blue = 0;
   green++;
   }
if (green == 8)
   {
   green = 0;
   red++;
   }
}
```

Listing 2
Program To Display All 512
Colors On The ST

```
#include <stdio.h>
#include <osbind.h>
main()
{
int old[16];          /* old palette settings         */
int new[16];          /* new palette settings         */
int x;                /* loop counter                 */
/* save old colors */
for (x = 0;x < 16;x++) old [x] = xbios(7,x, -1);
/* set up new colors */
for (x = 0;x < 16;x++) new [x] = 0;
/* install new palette */
xbios(6,new);
/* wait for exit queue */
drain();
Bconin(2);
/*restore the original palette */
for (x = 0;x < 16;x++) xbios(7,x,old[x];
}
```

Listing 3
Another Way To Blank The
CRT Of The ST



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Hacking The ST
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gram extents, and this month I would like to say a few words about paths. Since the ST has a file structure that supports subdirectors, specifying a file is not as simple as in older operating systems such as CP/M. Since a file can be in a folder that is in a folder, and so on and so forth, file names can get quite involved. If we have a folder on the B drive that is named FOLDER1 that contains a folder named FOLDER2, the way to access a file named TEST.DAT in FOLDER2 depends on where you are in the system.

To get around in the file structure of the ST you have to know a few terms. The most important term to be familiar with is "current directory." The current directory is the directory you are in now. Another important term is "root directory." The root directory is the main directory of a drive. The first window you open on a drive will display the root directory.

If you are in a directory on the A drive and you want to access the TEST.DAT file on the B drive, the full path would be: B:\FOLDER1\FOLDER2\TEST.DAT. If you happened to be in the FOLDER1 folder in the B drive at the time, the path would be FOLDER2\TEST.DAT. In the second example, the current directory was B:\FOLDER1 so you could use a relative path name. A relative path name does not have a leading backslash (\) while an absolute path does. The relative path is relative to the current directory. An absolute path is relative to a root directory.

If you are in B:\FOLDER1 and you use \FOLDER2\TEST.DAT, the leading backlash binds the path to the root directory. This means that the system will try to find B:\FOLDER2\TEST.DAT when you are really looking for B:\FOLDER1\FOLDER2\TEST.DAT. These distinctions are not apparent when working with the icons and windows of the desktop, but they become very important when working with files within your programs.

A quick word to the newcomers to C, to get the backslash characters compiled into a path it is necessary to use a double slash in the path like this: B:\\FOLDER1\\FOLDER2\\TEST.DAT. The reason for this is that the C compiler uses the backslash character as an escape character. You will often see \n, \r, \b, \t and \0 in C programs. These are control characters that are difficult to represent without an escape sequence.

\n is a linefeed, \r is a carriage return \b is a backspace and \t is a tab character. The \0 should be familiar, it is the nul! character used to terminate strings. ●

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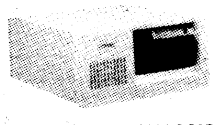

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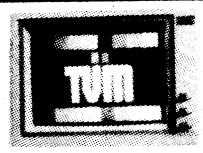

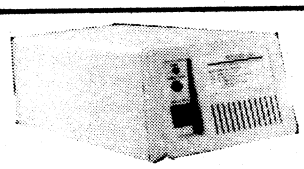

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Multi-Window
continued from page 175

fall back on, reference, etc. If you find yourself going off on a tangent it is easy to return to ground zero and start anew. I recommend it.

Multi-Windows And The Planning Process

A Multi-Window approach lends itself well to the structured, top-down planning process. In one window the overview plan can be produced. Subsequently, in logically subordinate windows, details of the plan can be developed module by module. Each module can be matched to the upper level, a lateral level, or to subordinate level modules. For example, the upper window may address a system level plan, the next level its two major components (say, hardware & software). Each of these in turn can treat ever-lower level elements of the plan. Under hardware there might be expansion treating the computer and peripherals. Under software, main program and supporting programs. If 6 windows available in HabaWriter are not enough, as each is

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Applying The Atari continued from page 72

sort on volume 1, I decided to try the whole list at once. With over 825 filenames, your alphabetizer did the sort in less than three minutes.

Frank Walters
Panama City, Florida

Frank's program is found under Listing 3. When you run the program, you're asked if you're using one or two drives. Two drives will minimize disk swapping, but one drive can still be used satisfactorily. Now you're asked to enter a filename that you want to save the data file as. Enter a name. This file will contain all the names of the various programs you own, and the diskette on which it is placed will be hereafter referred to as the data diskette.

The next prompt asks if this is a new file or if you are appending to an existing file. Since you have not yet used the file, type N for New. When you use ABCDIR in the future and want to add to the existing file, you'll type A for append.

Next you'll be instructed to insert the READ disk into drive

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Multi-Window continued from page 190

generated it can be appended to the upper level, leaving the window available for further use.

Other Uses

The pattern repeats itself for a broad spectrum of other users. If the subject addressed can be decomposed into modules, and these modules analyzed and generated separately, then a multi-window word processor can be used to advantage. Even, in fact, when the subject seems not to fit this mold one may force-fit its structure into a decomposition/re-combination framework. At that point the relationships can be examined, preferred alternative approaches identified, and a more comprehensive, integrated result produced.

Thus, if we are locked into sequential development of a topic, here again HabaWriter comes to our aid. In one window we can outline the subject; and in a second window we can then develop our thoughts. We can conveniently switch from outline to product by either displaying both windows simultaneously, or by alternating between the two windows.

Another application of multi-window word processing arises in computer-aided learning. The subject to be learned can be treated in an expository manner in the first window. In another window a sequence of questions related to the subject can be framed. Finally, a third window can contain the answer to the questions.

The student can read the exposition in window 1, then test himself with the contents of window 2. Window 3 is read to correct any misconceptions, or to reinforce the students understanding. For review the student merely returns to the questions. If he has problems with the questions he can return to the source material in window 1.

The size of the lesson can be varied to reflect the complexity of the material, the time span of attention, available student time, as well as other considerations.

A simple flashcard approach is also possible with two windows synchronized with the answer in one window corresponding to the question in the other. Words, sentences, and paragraphs of a foreign language can be learned this way.

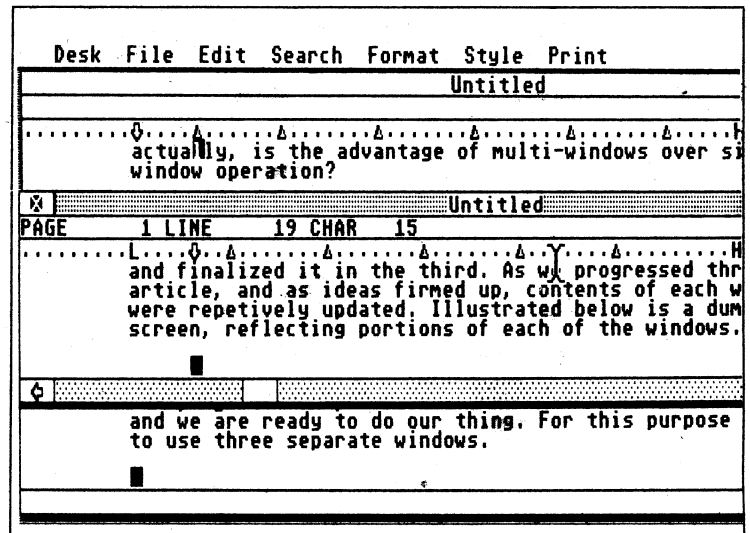
Desk File Edit Search Format Style Print
Untitled
actually, is the advantage of multi-windows over si
window operation?
Untitled
PAGE 1 LINE 19 CHAR 15
and finalized it in the third. As w progressed thr
article, and as ideas firmed up, contents of each w
were repetively updated. Illustrated below is a dum
screen, reflecting portions of each of the windows.
and we are ready to do our thing. For this purpose
to use three separate windows.

Fig. 5 Dump of screen with portions of each window

Occasionally, as an essay is written, a thought won't materialize or some information is lacking. Merely insert a symbol in the appropriate location. Later, when all your thoughts come together, complete the entry in a second window and transfer with a search and replace instruction. This is especially useful when the content of the second window is usable in several locations in the document, or in several documents.

The multi-windows are useful, also, when a complex illustration is being explained. The illustration can be kept in view, or alternately displayed, while the explanation is being written. Thus easy cross-reference is provided. The same concept applies to explaining a table of data, a graph, a diagram, or any entry which needs to be examined as it is written about.

Summary

By now it should be evident that having multi-windows available is often extremely helpful. HabaWriter meets this need by providing six windows, each busily doing its own thing. To the user this is a flexible, easily used solution to a complex problem. ●

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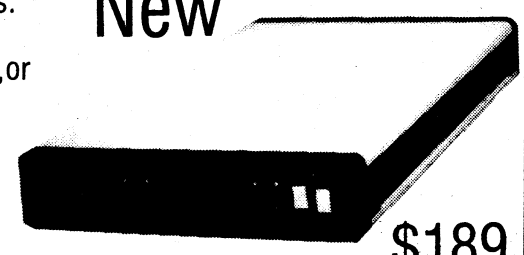

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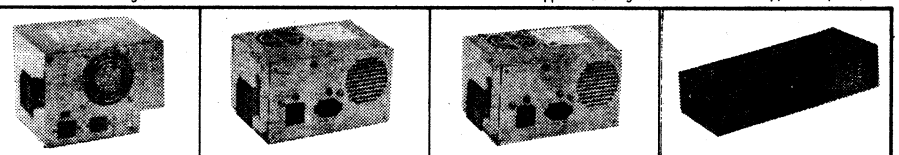

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Applying The Atari continued from page 193

1 or 2 depending on the number of drives you are using. The WRITE disk refers to the data diskette. The READ disk refers to each of your program diskettes that will have its directory read. You'll be asked to name or number each successive READ disk, and a maximum of three characters can be used for this purpose.

When you've finished entering disks, press RETURN for the "Disk name or number" prompt and the program will end. Now, load the February 1986 Instant Alphabetizer program (make sure you save ABCDIR first!) and change line 910 to the following:

```
910 POKE 881,0:OPEN #3,8,I,D$:
PRINT #3;DAT$(1,C*LN+3);
```

This makes the Instant Alphabetizer file-compatible with ABCDIR. Re-save Instant Alphabetizer with this simple modification and then run it. When the menu appears, select the Load file option. Insert your data diskette (the WRITE disk) and type the name of the file that you used. When the file is loaded, press A for the "ADD ITEMS AND REALPHABETIZE" option. But instead of adding entries, just press RETURN, since we are only interested in alphabetizing the file names that are in memory. When you're returned to the main menu, you can DISPLAY the alphabetized list of your programs or PRINT the list on the printer.

If you want to save the alphabetized file, choose the SAVE option and re-enter the name of the data file. When your diskette collection grows larger, you can use ABCDIR to add more file names to the alphabetized file (select APPEND FILE this time). You can then re-alphabetize this file. Make sure you make the modification on line 910 of the Instant Alphabetizer, or else you'll get extraneous characters in the file.

ATASCII Lister II

Listing 4 is a new version of ATASCII Lister that includes enhancements submitted by Phil Snider. The complete listing is included here, and contains all previous enhancements, such as the left-hand margin. The program works with Epson, Gemini, and graphics-compatible printers. Phil writes:

I have thoroughly enjoyed using the ATASCII Lister program you published back in July 1985. The program printouts are nice to have around for quick, easy reference, and a big help in finding one's errors after typing in a program (this was before Program Perfect).

Several months ago, I made some enhancements to your original program to skip over the perforations for listings over one page long and to line feed the paper to the top of the next page after the completion of a listing. Also, when a single listing or the last listing in a multiple set is finished printing, the paper is form fed one blank sheet so the completed listing is ready to be torn from the web.

When the program is run, you will be prompted with the question "Will there be more than one listing? (Y/N)." If you need two or more program listings in one sitting, press y. When the first listing is finished printing, the paper is line fed to the top of the next page and the program runs itself again.

If you need a single program listing or you are printing your last program listing in a multiple set, press N when the progam asks "Will there be more than one listing? (Y/N)." This time when the printing is done, the paper is line fed to the top of the next page as before, and then the paper is form fed one blank page. Your printout or printouts are now ready to be torn off the web.

As for skipping over the perforations, when the program counts 62 printed lines, it executes four line feeds, resets the line counter and continues on.

The printouts are in neat order (no more printing on the perforation) and you don't have to keep resetting the paper to the top of the page or feeding the paper manually to a tearing-off point. I have found these enhancements to be quite handy and hope they will be beneficial to your readers. *Phil Snider*

Chattanooga, Tennessee

Holograph stickers are on their way to Frank Walters and Phil Snider and I thank both of them for their valuable contributions.

Digitized Sounds

Next month, I'll review a sound digitizer. This piece of hardware enables you to store real-life sounds in your Atari, just as a video digitizer (i.e. ComputerEyes) lets you store real-life images. In preparation for this review, I am including several digitized sound samples on this month's diskette (see end of article for information on purchasing monthly diskette). I had loads of fun sampling these sounds and hope you'll be equally excited listening to them.

Next Month

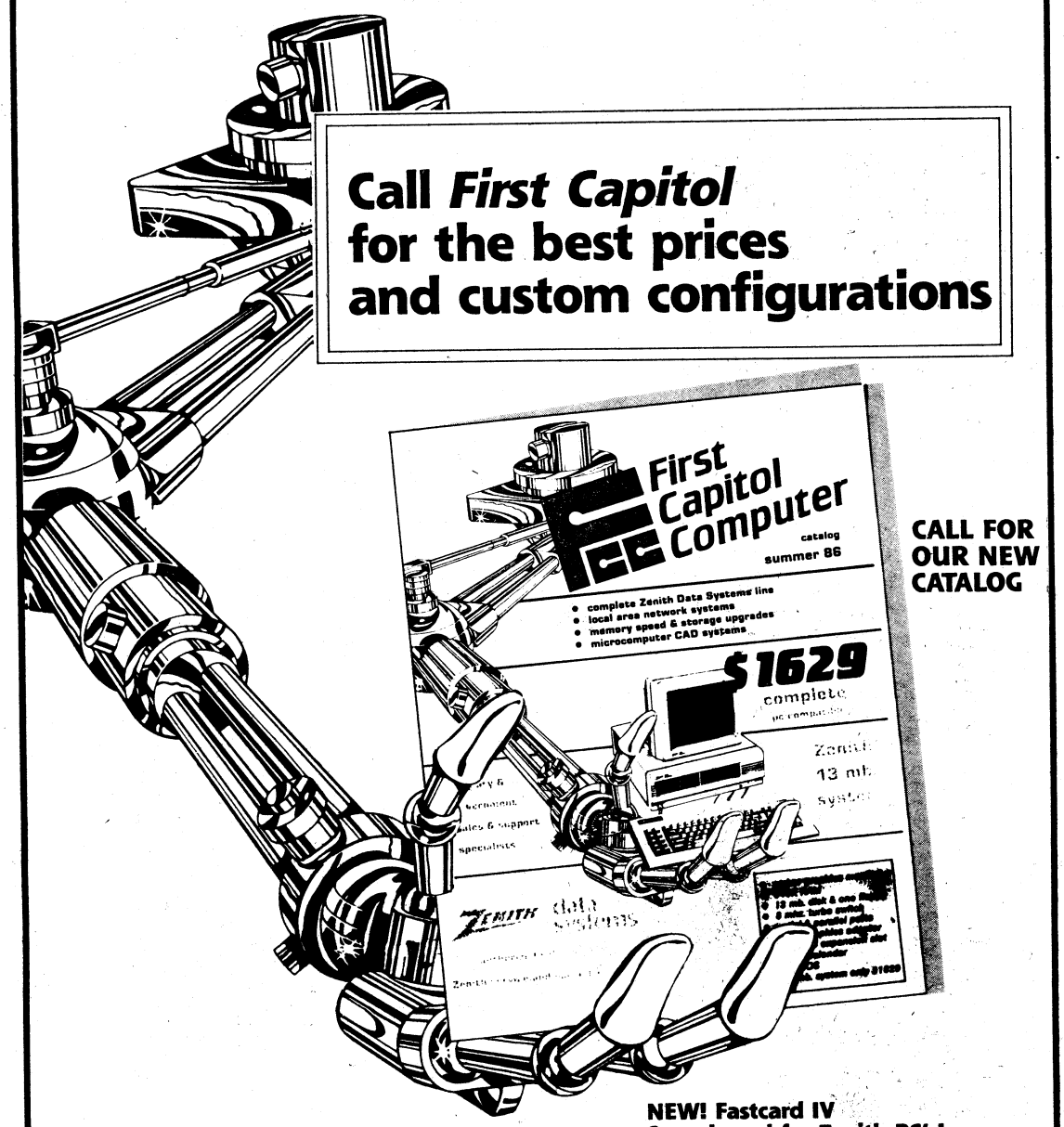
A computerized telephone book is in the works for next month. We'll also have more reader mail, new products, and some details on Atari's new CAD/CAM machines.

Readers' questions, comments and contributions are welcome. Please enclose a self-addressed, stamped envelope (SASE) for a personal reply.

A diskette of the programs listed in this month's column is available from the author for $7.00, postpaid. Please make checks payable to "Jeff Brenner" and specify your disk drive model.

"Program Perfect" is a utility used to check for typing errors while entering programs from this column. Readers may send $5.00 for a diskette or a SASE for a listing of this program.

Address all correspondence to: Jeff Brenner, "Applying The Atari 7/86", c/o *Computer Shopper*, P.O. Box F, Titusville, FL 32781-9990. ●



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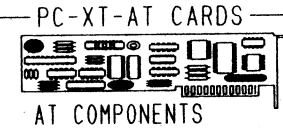

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AT style keyboard	75

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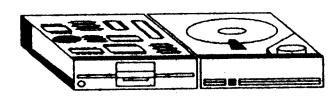

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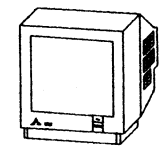

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